

Appln. No. 10/711,685
Docket No. PES-D-03-025/PES-0220

REMARKS / ARGUMENTS

Applicant appreciates the Examiner's reconsideration of the previous rejection under 35 U.S.C. §102, and withdrawal of the rejections associated thereof.

Status of Claims

Claims 1-23 are pending in the application and stand rejected. Applicant has amended Claims 1, 13 and 20, and has added new Claims 24-25, leaving Claims 1-25 for consideration upon entry of the present Amendment.

Applicant respectfully submits that the rejections under 35 U.S.C. §112, first paragraph, 35 U.S.C. §112, second paragraph, 35 U.S.C. §102(b), and 35 U.S.C. §103(a), have been traversed, that no new matter has been entered, and that the application is in condition for allowance.

Double Patenting

Claims 1 and 2 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1, 6 and 7 of copending Application No. 10/985,633.

Applicant provides herewith a terminal disclaimer with regard to the aforementioned copending Application, thereby traversing this double patenting rejection.

Objections to the Specification

The specification is objected to under 35 U.S.C. §132(a) for allegedly introducing new matter into the disclosure.

Allegation-I: The Examiner alleges the introduction of new matter relating to the phrase: "where each of the first, second and third layers are distinguishable from each other and capable of being made from a different material".

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Allegation-II: The Examiner alleges the introduction of new matter relating to all layers being “metallurgically bonded together to define a first (or a second) bond line that encompasses the first (or second) plurality of channels, the first (or second) inlet port, and first (or second) outlet port”.

Applicant respectfully disagrees and traverses these objections for the following reasons.

Mere rephrasing of a passage does not constitute new matter. Accordingly, a rewording of a passage where the same meaning remains intact is permissible. In re Anderson, 471 F.2d 1237, 176 USPQ 331 (CCPA 1973). MPEP §2163.07.

Regarding Examiner's Allegation-I

At Paragraph [0028], Applicant discloses a bipolar plate constructed from a laminated arrangement of three or more layers bonded together, each layer being disclosed having a different arrangement of flow through channels. Hence, each of the three layers are distinguishable from each other.

At Figure 4, Applicant discloses a bipolar plate constructed from three laminations, each layer being illustrated having a different arrangement of flow through channels. Hence, each of the three layers are distinguishable from each other.

At Paragraph [0028], Applicant discloses that the bipolar plate may be made of niobium, zirconium, tantalum, carbon steel, stainless steel, nickel, cobalt, and associated alloys, for example. Hence, the bipolar plate is clearly not limited to a single material, and in view of the bipolar plate being an arrangement of laminations, each lamination is *capable of* being made from a different material, such as the materials listed in Paragraph [0028].

At Paragraph [0038], Applicant discloses that “it will be understood by those skilled in the art that various changes may be made and equivalents may be substituted for elements thereof without departing from the scope of the invention.” Here, one skilled in the art would appreciate that a bipolar plate capable of being fabricated from any of a number of disclosed materials, and made from an arrangement of laminations,

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would provide the designer of such a bipolar plate with the option of substituting one of the disclosed materials for another in any of the bipolar plate layers.

In view of the foregoing, Applicant respectfully submits that the phrase "where each of the first, second and third layers are distinguishable from each other and capable of being made from a different material" is fully supported by the application as originally filed, and therefore does not constitute new matter.

Regarding Examiner's Allegation-II

At Paragraph [0011], Applicant discloses a bipolar plate being a laminated arrangement of bonded layers that prevent fluid communication between a first fluid flow path and a second fluid flow path within the laminated arrangement. Hence, the laminated layers are disclosed to form a bond to prevent fluid leakage.

At Paragraph [0020], Applicant discloses a bipolar plate made from three or more stamped layers that are that are diffusion bonded together to form a laminated arrangement. Hence, the layers are disclosed being metallurgically bonded.

At Paragraph [0020], Applicant discloses that the bonding process applied to the laminations of the bipolar plate is not limited to diffusion bonding, and may also be accomplished via brazing for example. Hence, the laminated layers are further disclosed being metallurgically bonded.

At Paragraph [0035] and in conjunction with Figure 5, Applicant discloses and illustrates the sealing of the laminations (first layer 245 bonded and sealed to third layer 265) via diffusion bonding at a perimeter shown as bond line 315, 281 and 286, which encompasses a first plurality of channels 250, a first inlet port 280, and a first outlet port 285. Hence, a metallurgical bond line is disclosed that encompasses the features claimed.

At Paragraph [0035] and also in conjunction with Figure 5, Applicant discloses that a similar arrangement of metallurgical bonding and sealing is present for the sealing of second layer 255 and third layer 265, and reference Figure 5 for illustrative support thereof. Hence, a metallurgical bond line is disclosed that encompasses the feature claimed.

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In view of the foregoing, Applicant respectfully submits that the phrase "metallurgically bonded together to define a first (or a second) bond line that encompasses the first (or second) plurality of channels, the first (or second) inlet port, and first (or second) outlet port" is fully supported by the application as originally filed, and therefore does not constitute new matter.

In light of the foregoing, Applicant respectfully submits that the language the Examiner objects to is merely a rephrasing of a passage or passages disclosed in the originally filed application where the same meaning remains intact. As such, Applicant respectfully submits that the rephrasing is permissible, and therefore does not constitute new matter. Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw these objections, which Applicant considers to be traversed.

Rejections Under 35 U.S.C. §112, First Paragraph

Claims 1-23 stand rejected under 35 U.S.C. §112, first paragraph, for failing to comply with the written description requirement.

The Examiner alleges that the claims contain subject matter that was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Appellant respectfully disagrees with the Examiner's rejection for the following reasons.

Applicant believes that a full response to the rejections under 35 U.S.C. §112, first paragraph, has been provided as set forth above with regard to the objections under 35 U.S.C. §132(a), which is incorporated herein by reference in its entirety.

In summary, Applicant submits that the specification as originally filed provides clear guidance as to the scope of the claimed invention, and while the claims do not employ the exact words presented in the specification, a mere rephrasing of a passage does not constitute uncertainty where the same meaning remains intact. As such,

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Applicant submits that the language that is objected to by the Examiner is fully supported by the application as originally filed.

In view of the foregoing, Applicant respectfully submits that the specification as originally filed provides general guidelines as to the scope of the invention such that one of ordinary skill in the art would know what was meant, and that the subject matter of the invention has been described and is supported in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention, and therefore respectfully requests reconsideration and withdrawal of all rejections under 35 U.S.C. §112, first paragraph.

Rejections Under 35 U.S.C. §112, Second Paragraph

Claims 8-9 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicant regards as the invention.

The Examiner requests clarification with regard to the limitations of "a first through-hole channel" and "a second through-hole channel" as presented in Claim 8.

Applicant traverses this rejection for the following reasons.

In Claim 8, Applicant is claiming, inter alia:

"...the first set of header channels (270, Fig. 4, Paragraph [0028]) comprises a first through-hole channel (271, Fig. 4, Paragraph [0028]) extending from the first inlet port (280, Fig. 4, Paragraph [0028]), and a second through-hole channel (272, Fig. 4, Paragraph [0028]) extending from the first outlet port (285, Fig. 4, Paragraph [0028])..."

In Claim 1, the "first plurality of through-hole channels" are depicted in Fig. 4 as reference numeral 250 and discussed in Paragraph [0028], and the "second plurality of through-channels" are depicted in Fig. 4 as reference numeral 260 and also discussed in Paragraph [0028].

Thus, the "first through-hole channels" and the "second through-hole channels" of Claim 8 are in reference to the header channels, as claimed and described in the specification, such as at Paragraph [0028] for example, and the "first plurality of through-

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hole channels” and the “second plurality of through-hole channels” of Claim 1 are in reference to the first and second layers, as claimed and described in the specification, such as at Paragraph [0028] for example.

In view of the foregoing, Applicant respectfully submits that the claimed subject matter is described in such a manner that reasonably conveys to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection, which Applicant considers to be traversed.

Rejections Under 35 U.S.C. §102(b)

Claims 1-3, 8-13 and 16-23 stand rejected under 35 U.S.C. §102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Spear (U.S. Patent No. 6,051,331, hereinafter Spear).

Applicant traverses this rejection for the following reasons.

Applicant respectfully submits that “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, *in a single prior art reference.*” *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). Moreover, “[t]he identical invention must be shown in as complete detail as is contained in the *** claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Furthermore, the single source must disclose all of the claimed elements “arranged as in the claim.” *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984). Missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 780, 227 U.S.P.Q. 773, 777 (Fed. Cir. 1985).

Applicant has amended independent Claims 1, 13 and 20 to now include, inter alia, the limitations of:

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"...a first metallic seal disposed between the first layer and the third layer and comprising material from the first layer and the third layer, the first metallic seal configured to define a first bond line that encompasses the first plurality of channels, the first inlet port and the first outlet port;

a second metallic seal disposed between the second layer and the third layer and comprising material for the second layer and the third layer, the second metallic seal configured to define a second bond line that encompasses the second plurality of channels, the second inlet port and the second outlet port;

wherein each of the first, second and third layers have distinguishable through-hole channels with respect to each other;

wherein the first metallic seal and the second metallic seal are disposed and configured to prevent fluid communication between the first plurality of channels and the second plurality of channels."

No new matter has been added by these amendments as antecedent support may be found in the specification as originally filed, such as at Paragraphs [0011], [0020], [0028], [0035] and [0038], and at Figures 4 and 5, for example.

More specifically with respect to the amended claim language that describes the metallic seals comprising material from the first (or the second) layer and the third layer, Applicant submits that antecedent support is provided in the specification at Paragraph [0020], which describes diffusion bonding, which results in a metallic seal comprising material from the two metals that are being bonded.

Dependent claims inherit all of the limitations of the respective parent claim.

In alleging anticipation and in the alternative obviousness, the Examiner alleges that "Spear discloses a bipolar plate made of several layers. A bipolar plate comprises a first layer (30-3), a second layer (30-5), and a third layer (30-4). The layers are bonded to each other (1:16) and a gasket is located on each end of the bipolar plate that seals the active area". Page 6 of instant office action.

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Here, the Examiner makes reference to first (30-3), second (30-5) and third (30-4) layers bonded together (1:16), and that a gasket *located on each end* of the bipolar plate seals the active area.

In comparing Spear with the claimed invention as amended, Applicant submits that the Spear sealing arrangement is substantially different from the claimed sealing arrangement.

As amended, Applicant more particularly claims a first metallic seal comprising material from the first and third layers, and a second metallic seal comprising material from the second and third layers, where each metallic seal is configured to define a bond line that encompasses a defined flow region.

In comparing Spear with the claimed invention as amended, Applicant finds Spear to disclose bonded platelets with *no defined bond line that encompasses a defined flow region*, but with an overall diffusion bond (col. 17, lines 30-61) that bonds the entire surface of one platelet to the entire surface of an opposing platelet (Spear discusses pressure testing to ensure that there are no internal channel short circuits). Hence, there is no defined bond line that encompasses a defined flow region, as claimed in the instant invention.

Also, Applicant finds Spear to generally disclose gaskets (col. 11, lines 15-20) for sealing the bipolar separator to the EMA, which the Examiner acknowledges are located on each end of the bipolar plate. In view of the claimed invention as amended, Applicant submits that the Spear gaskets are substantially different from the metallic seals claimed in the instant invention, and are disposed at a totally different location for a totally different purpose.

Furthermore, if Applicant were to agree that the Spear sealing ridges (not shown) (col. 10, lines 43-44) were synonymous with the claimed metallic seals, Applicant submits that the claimed limitations of the instant invention would still not be met, as the Spear sealing ridges are not disclosed as comprising material from the first layer and the third layer (first metallic seal), or from the second layer and the third layer (second metallic seal).

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Accordingly, Applicant submits that Spear does not disclose all of the claimed elements arranged as in the claim, and absent anticipatory disclosure in Spear of each and every element of the claimed invention arranged as in the claim, Spear cannot be anticipatory.

Furthermore, Applicant submits that Spear fails to teach or suggest each and every element of the claimed invention arranged so as to perform as the claimed invention performs, and therefore cannot establish a prima facie case of obviousness.

In view of the amendment and foregoing remarks, Applicant submits that Spera does not disclose, teach or suggest, each and every element of the claimed invention arranged as claimed, or arranged so as to perform as the claimed invention performs, and therefore cannot be anticipatory or establish a prima facie case of obviousness. Accordingly, Applicant respectfully submits that the Examiner's rejection under 35 U.S.C. §102(b), or in the alternative under 35 U.S.C. §103(a), has been traversed, and requests that the Examiner reconsider and withdraw of these rejections.

Rejections Under 35 U.S.C. §103(a)

Claims 4, 5 and 14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Spear in view of Wilson (U.S. Publication No. 2004/0197630, hereinafter Wilson).

Claims 6-7 and 15 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Spear as applied to appropriate claims above, and further in view of Toshihiro (JP 05-251097, hereinafter Toshihiro).

Applicant traverses these rejections for the following reasons.

Applicant respectfully submits that the obviousness rejection based on the References is improper as the References fail to teach or suggest each and every element of the instant invention in such a manner as to perform as the claimed invention performs. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Examiner must meet the burden of establishing that all elements of the invention are taught or suggested in the prior art. MPEP §2143.03.

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Dependent claims inherit all of the limitations of the respective parent claim and any intervening claim.

In view of Wilson and Toshihiro not being applied against Claims 1, 13 or 20, in view of the amendments set forth above with regard to Claim 1, 13 and 20, and in view of the subject claims being dependent upon one of the amended parent claims, Applicant submits that Claims 4-7 and 14-15 are allowable at least for the reason that they depend from an allowable claim.

Additionally, Applicant submits that Wilson and Toshihiro fail to cure the deficiencies of Spear at least with respect to the amendments set forth above, and therefore fail to establish a prima facie case of obviousness.

In view of the foregoing, Applicant submits that the References fail to teach or suggest each and every element of the claimed invention and are therefore wholly inadequate in their teaching of the claimed invention as a whole, fail to motivate one skilled in the art to do what the patent Applicant has done, fail to recognize a problem recognized and solved only by the present invention, fail to offer any reasonable expectation of success in combining the References to perform as the claimed invention performs, and discloses a substantially different invention from the claimed invention, and therefore cannot properly be used to establish a prima facie case of obviousness. Accordingly, Applicant respectfully requests reconsideration and withdrawal of all rejections under 35 U.S.C. §103(a), which Applicant considers to be traversed.

In light of the forgoing, Applicant respectfully submits that the Examiner's rejections under 35 U.S.C. §112, first paragraph, 35 U.S.C. §112, second paragraph, 35 U.S.C. §102(b), and 35 U.S.C. §103(a), have been traversed, and respectfully requests that the Examiner reconsider and withdraw these rejections.

Regarding New Claims 24-25

Applicant has added new Claims 24-25 to capture originally disclosed but unclaimed subject matter, albeit in alternative language. No new matter has been added

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as antecedent support can be found in the application as originally filed, including the claims and various figures. In view of the comments set forth herein, Applicant submits that Claims 24-25 are directed to allowable subject matter and respectfully requests entry and notice of allowance thereof.

If a communication with Applicant's Attorneys would assist in advancing this case to allowance, the Examiner is cordially invited to contact the undersigned so that any such issues may be promptly resolved.

The Commissioner is hereby authorized to charge any additional fees that may be required for this amendment, or credit any overpayment, such as Terminal Disclaimer fee under 37 CFR 1.20(d) in the amount of \$65 (small entity), to Deposit Account No. 06-1130. In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above-identified Deposit Account.

Respectfully submitted,

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